

We Claim:

1. An integrated semiconductor circuit configuration,
comprising:

at least one of a semiconductor material region and a chip;

a circuit device having a current consumption;

a current/voltage supply line device connected to said circuit
device;

a current measuring device connected to said current/voltage
supply line device for measuring the current consumption of
said circuit device through said current/voltage supply line
device, said current measuring device having at least one Hall
sensor device; and

said circuit device, said current measuring device, and at
least part of said current/voltage supply line device being
commonly integrated in said at least one of said semiconductor
material region and said chip.
2. The integrated semiconductor circuit configuration
according to claim 1, wherein said Hall sensor device measures
an electric current flowing in a respective current/voltage

supply line device through a magnetic field generated by the current.

3. The integrated semiconductor circuit configuration according to claim 1, wherein:

said Hall sensor device a plurality of Hall sensors sensing a plurality of at most partly overlapping measurement ranges; and

one of said Hall sensors is for one measurement range.

4. The integrated semiconductor circuit configuration according to claim 3, wherein:

said current/voltage supply line device is a plurality of current/voltage supply line devices associated with a respective one of said Hall sensors; and

at least one of said Hall sensor device and each of said Hall sensors has a magnetic field concentrating device concentrating a magnetic field arising as a result of current flow in an associated said current/voltage supply line device onto said at least one of said Hall sensor device a respective one of said Hall sensors.

5. The integrated semiconductor circuit configuration according to claim 4, wherein said magnetic field concentrating device has a soft-magnetic material.

6. The integrated semiconductor circuit configuration according to claim 4, wherein said magnetic field concentrating device substantially encloses a cross-section of a respective one of said current/voltage supply line devices at at least one location.

7. The integrated semiconductor circuit configuration according to claim 4, wherein:

said magnetic field concentrating device has a gap; and

said at least one of said Hall sensor device and a respective one of said Hall sensors is disposed in a region of said gap.

8. The integrated semiconductor circuit configuration according to claim 4, wherein said Hall sensor device is configured as one of a compensation current converter and a closed-loop Hall transducer.

9. The integrated semiconductor circuit configuration according to claim 8, further comprising a magnetic field compensation device.

10. The integrated semiconductor circuit configuration according to claim 9, wherein said magnetic field compensation device is a current line device in a region of said magnetic field concentrating device.

11. The integrated semiconductor circuit configuration according to claim 1, wherein said Hall sensor device is formed in a semiconductor material.

12. The integrated semiconductor circuit configuration according to claim 1, wherein said semiconductor material is silicon.

13. The integrated semiconductor circuit configuration according to claim 1, further comprising a compensation device adapted to compensate for a voltage drop of an operating voltage occurring across said Hall sensor device during operation.

14. The integrated semiconductor circuit configuration according to claim 1, further comprising two output terminals tapping off a Hall voltage of said Hall sensor device for externally measuring the Hall voltage and, thereby, externally measuring current flowing through said current/voltage supply line device.

15. The integrated semiconductor circuit configuration according to claim 1, wherein said current measuring device internally measures a Hall voltage of said Hall sensor device and, thereby, internally measures current flowing through said current/voltage supply line device.

16. The integrated semiconductor circuit configuration according to claim 15, further comprising:

a comparison voltage terminal receiving an externally fed in comparison voltage for the internal current measurement of the Hall voltage measurement; and

a comparison device connected to said comparison voltage terminal and to said Hall sensor device for feeding in the comparison voltage of said comparison voltage terminal and the Hall voltage of said Hall sensor device, said comparison device comparing the Hall voltage with the comparison voltage.

17. The integrated semiconductor circuit configuration according to claim 16, further comprising a register storing therein one of data and signals representative of the current flowing in said current/voltage supply line device, said register providing at least one of said data and signals for reading out therefrom.

18. The integrated semiconductor circuit configuration according to claim 1, further comprising a register storing therein one of data and signals representative of the current flowing in said current/voltage supply line device, said register providing at least one of said data and signals for reading out therefrom.

19. The integrated semiconductor circuit configuration according to claim 17, further comprising at least one input/output terminal connected to said register for at least one of writing to and reading from said register.

20. The integrated semiconductor circuit configuration according to claim 18, further comprising at least one input/output terminal connected to said register for at least one of writing to and reading from said register.

21. An integrated semiconductor circuit configuration, comprising:

at least one of a semiconductor material region and a chip;

a current/voltage supply line device having a current consumption;

a current measuring device being connected to said current/voltage supply line device and having at least one Hall sensor device for measuring the current consumption through said current/voltage supply line device;

a circuit device connected to said current/voltage supply line device and supplied at least one of current and voltage through said current/voltage supply line device, and

said circuit device, said current measuring device and at least part of said current/voltage supply line device being commonly integrated in said at least one of said semiconductor material region and said chip.